Draft Environmental Impact Statement Guidelines for the Environmental Assessment of the Sydney Tar Ponds and Coke Ovens Sites Remediation Project

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1. BACKGROUND

1.1 Context

On May 12, 2004, the Minister of Public Works and Government Services Canada (PWGSC) on behalf of Canada, and Premier Hamm on behalf of Nova Scotia signed a Memorandum of Agreement (MOA) with respect to the proposed remediation of the Sydney Tar Ponds and Coke Ovens sites (the Project), located in the Cape Breton Regional Municipality (CBRM), Nova Scotia. The Project would be carried out employing a combination of proven technologies, including permanent installation of surface and groundwater controls, bio-remediation, removal and destruction of selected polychlorinated biphenyl (PCB) and polycyclic aromatic hydrocarbon (PAH) contaminated sediments, solidification and stabilization of remaining materials, the construction of permanent engineered caps and restoration of the sites to facilitate future use.

The Project is subject to an Environmental Assessment (EA) pursuant to the Canadian Environmental Assessment Act (CEAA) and the provisions of Part IV of the Nova Scotia Environment Act. As such, and in keeping with the MOA, the EA will be coordinated to reflect requirements contained in both pieces of legislation.

2. THE REVIEW PROCESS

2.1 Environmental Impact Statement

Environmental impact assessment (EIS) is a planning tool intended to identify and mitigate significant adverse environmental effects of projects.
The EIS document produced by the Proponent will identify the potential environmental effects of the Project on the environment. The EIS will serve as the cornerstone of the Panel's review and evaluation of the potential effects of the Project. The public (including Aboriginal peoples), interested parties and government representatives will be invited to comment on the completeness and accuracy of the EIS in addressing these Guidelines, and to submit materials for the Panel to consider. Should the Panel deem further information necessary, it may arrange for additional studies, which it will include in the Public Registry. The Panel will consider all materials included in the Registry in evaluating the Project.

The EIS will help regulators and members of the public to understand the Project, the existing environment, and the potential environmental effects of the Project.

3. ENVIRONMENTAL IMPACT STATEMENT

3.1 Purpose of the EIS Guidelines

This document provides specific direction to the Proponent regarding the preparation and structure of the EIS. The EIS Guidelines define the issues that the Proponent must address. It is the responsibility of the Proponent to provide sufficient data and analysis on any potential adverse environmental effects to permit proper evaluation by the Panel, the public, and technical and regulatory agencies. The EIS must take into consideration all factors set out in section 16 of the Canadian Environmental Assessment Act and section 12 of the Nova Scotia Environmental Assessment Regulations. The Guidelines outline the minimum information required while leaving the Proponent some latitude in selecting methods to compile the EIS. The EIS must be prepared in accordance with the final EIS Guidelines to be issued by the federal Minister of the Environment and the Nova Scotia Minister of Environment and Labour.

3.2 Traditional Knowledge and Public Involvement

3.2.1 Use and Respect for Traditional and Community Environmental Knowledge

Traditional and community environmental knowledge, hereafter referred to as traditional knowledge, makes an important contribution to project planning and the assessment process.

Traditional knowledge refers to the broad base of knowledge held by individuals and collectively by communities that may be based on spiritual teachings, personal observation and experience on land and sea or passed on from one generation to another through oral and/or written traditions. This tradition is a dynamic, substantive, and distinct living knowledge.

Traditional knowledge shall be obtained and presented in one of two ways:

- The Proponent will make best efforts, with the co-operation of other parties, to incorporate into its EIS traditional knowledge to which it has access; and,
- Alternatively, the Proponent may facilitate the presentation of such knowledge by persons and parties having access to this information to the Panel during the course of the review.

3.2.2 Stakeholder Involvement

Within the EIS the Proponent must demonstrate how concerns of residents, Aboriginal people, local government, organizations and other stakeholders who are likely to be affected by the Project have been identified and addressed. The EIS will describe objectives, methods and results achieved in these discussions.

The Proponent will provide a summary table as a means of showing how the public's concerns have been identified and addressed.

4. OVERVIEW OF THE ENVIRONMENTAL IMPACT STATEMENT

4.1 Use of Existing Information

The Proponent is encouraged to consider information in the Public Registry when preparing the EIS, and to make use of existing information related to the environment affected by the Project. When that information is used to meet some of the EIS requirements, include it directly in the EIS or identify its source. This may be done through cross-referencing, direct citation or any other means that permits immediate access. When relying on existing information, comment on its appropriateness and/or relevance over space and time, along with any perceived limitations regarding the inferences or conclusions that have been drawn.

The EIS must provide sufficient information to identify, describe and determine the significance of potential effects on the environment that could arise from the Project.

4.2 Presentation of the EIS

The EIS shall be concise, analytical, and complete. When necessary, the reports and documents that will be needed to increase the understanding of the proposed project, shall be provided in a separate volume. The EIS shall have a complete and detailed annotated bibliography of all the studies and reports carried out.

4.3 Data Presentation

Whenever necessary to clarify the text and to provide a better understanding of what is being discussed / described, the project proponent will include graphs, charts, diagrams, maps, and other visual tools (e.g. aerial and other photographs).

Whenever possible, the maps will be provided in the same scale and projection, and should indicate common and accepted place-names used by the local people.

4.4 Executive Summary

The Proponent shall provide a plain language Executive Summary that gives the reader a concise but complete overview of the EIS. Include background on the Proponent; a brief Project overview; the Project setting (physical, biological and human environments); and key findings of the assessment.

As it may be used as a stand-alone document, the Executive Summary should present the information in a general manner focusing on the main issues and findings. Use maps, tables, and figures to aid the presentation.

4.5 Expectations

In accordance with the Guidelines the proponent must identify and describe all significant environmental (biological, physical, and human) effects likely to arise from the Project. If the Proponent omits from the EIS any matters required in these Guidelines, then that omission must be clearly indicated so that the Panel, the public and other interested parties will have an opportunity to comment on and respond to this judgment. When the Panel disagrees with the Proponent's judgment, it may require the Proponent to provide additional information.

The Proponent is expected to make use of environmental assessment guidance materials published by federal and provincial departments. The Proponent must employ properly qualified and knowledgeable professionals to conduct the assessment and must document the credentials of experts in an appendix. The EIS must support any analyses, interpretation of results and conclusions by providing all relevant references.

5. INTRODUCTION TO THE ENVIRONMENTAL IMPACT STATEMENT

Provide an introductory chapter that gives a brief overview of the context for the environmental review. The introduction will identify the Proponent, give an overview of the Project, describe the setting, discuss the assessment process, describe the regulatory environment, and highlight the study strategy and methodology.

5.1 The Proponent

The Proponent shall:

- Identify itself and explain current and proposed ownership of rights and interest in the project, operational arrangements, and corporate and management structures
- Specify the mechanism used to ensure that corporate policies are implemented and respected
- Present its environmental policy
- Identify key personnel, contractors, and / or sub-contractors responsible for preparing the EIS

5.2 Project Overview and Purpose

Briefly summarize the project, including its purpose, location, components, and phases, workforce and equipment, associated activities, schedule, and cost

5.3 The Project Setting

Describe the geographic area where the project will be located, including an overview of the social, economical, cultural, and ecological setting.
Identify or describe the current and potential future land ownership within the project area.

5.4 The Environmental Impact Assessment Process and Approvals

The Proponent shall:

- Identify the planning context for the environmental assessment of the Project;
- Discuss government policies, regulations, and land use plans that have a bearing on the Project;
- Identify the requirement for the environmental assessment under the *Canadian Environmental Assessment Act* and the *Nova Scotia Environment Act*.
- Summarize the main steps in the environmental assessment process leading to the establishment of the Panel and the main approvals required to undertake the Project;
- Briefly explain the environmental assessment review process; and
- Describe the role of the EIS in the overall environmental assessment process

5.5 Regulatory Process Review

The Proponent shall identify and briefly describe all the federal and provincial environmental regulations and laws that require compliance in relation to the planning and implementation of the project.

The Proponent should also identify each regulatory approval required for the planning and implementation of the project. Describe the approval process for each topic identified including:

- Activity requiring approval
- At what stage is the approval or the permit required
- The regulatory agency in charge for the approval or permit
- Name of the approval or permit
- Associated legislation

5.6 International Agreements

The Proponent shall describe the implications of international agreements, designations, or action plans that may influence the Project or its environmental effects.

6. PROJECT DESCRIPTION

Provide specific and sufficient detail to clarify the nature of the Project and to identify its potential effects. The Project description should, when read in combination with the description of the existing environment, allow the Panel to understand the selection of Valued Environmental Components (VECs), their interactions, and potential effects that may be caused on them by the Project. Although the approach to environmental management will influence the entire EIS, describe environmental protection and monitoring strategies later in the EIS.

6.1 The Need for, the Purpose of, Alternatives to the Project, and Alternative means to the Project

6.1.1 Need for the Project

Consistent with the Memorandum of Agreement for the Remediation of the Sydney Tar Ponds and Coke Ovens Sites, the Proponent shall:

- Describe the need for the project
- Explain the problem or opportunity that the Project is intending to solve
- Clearly describe the fundamental rationale for the Project

6.1.2 Purpose of the Project

The Proponent shall describe the purpose of the Project and identify what will be achieved by carrying out the Project. This should include identifying the main functions of the project and who will benefit from it.

6.1.3 Alternatives to the Project

In light of the need for the Project, as established above, the Proponent shall:

- Describe in general terms, the alternatives to the Project (those functionally different ways to achieve the Project need and purpose), including but not limited to, the "do nothing" alternative
- Identify the reasons for selecting the Project from among the alternatives and the reasons for not selecting the other alternatives
- Identify any criteria used to assess the alternatives
- Identify in general terms, the major beneficial and adverse effects of the alternatives considered

6.1.4 Alternative Means of Carrying out the Project

The EIS shall include an analysis of the alternative means, which from the perspective of the proponent are technically and economically feasible methods of carrying out the project. For those alternative means that are technically and economically feasible, the EIS shall identify the potential environmental effects of those alternatives.

The analysis should be structured according to the two locations (Tar Ponds and Coke Ovens Sites) identified in the Project Description and should include the identification of the alternate means in which the Project could be implemented or carried out. At the discretion of the Proponent, this may include but not be limited to alternative water control methods, removal and destruction methods, in-place treatment methods, containment methods, treatment facility locations, site surface and restoration methods, transportation methods and routes, timing and facility sizes and capacities. Identify the criteria and/or thresholds used to determine whether any alternative means are technically or economically feasible.

Identify the major relative advantages and disadvantages (potential beneficial and adverse effects) of the alternative means and the criteria used to determine their advantages or disadvantages. Identify the reasons for selecting the means utilized in the proposed project and for not selecting other alternative means. Discuss how community knowledge was considered and how the public was involved in identifying and selecting alternative means.

6.2 The Proposed Project

This section of the Report shall describe the project as it is planned to progress through the construction, operation and decommissioning phases of its life. Any assumptions that underlie the details of the project design shall be described. Where specific codes of practice, guidelines and policies apply to items to be addressed, those documents shall be cited and included as appendices to the Environmental Assessment Report, including mapping at an appropriate scale.

6.2.1 Location

Describe the ultimate boundaries of the proposed project in a regional context showing existing and proposed land uses and infrastructure such as road networks, railways, power lines, proximity to settled areas, individual and community water supplies, wetlands, ecologically sensitive areas and archaeological sites.

6.2.2 Construction Methods, Schedule and Other Constraints

Detail general construction practices, hours of operation and proposed construction schedules.

6.2.3 Structures

Describe permanent or temporary structures that will be constructed.

6.2.4 Decommissioning and reclamation

Describe the proposed plans for decommissioning the facilities, including all infrastructure, and reclamation of any impacted sites. The report shall also discuss the future land use options of the property following reclamation.

6.2.5 Cost and Workforce

For each Project phase, the Proponent shall describe the capital costs, the number of workers required by occupation and/or skill.

6.2.6 Modifications

The Proponent shall describe the management approach to, and conceptual plans for, potential modifications (including expansion or discontinuation) to the physical works or activities described above. At the same time the Proponent shall specify the conditions or potential risks, which would necessitate modifications to the Project.

7. **IMPACT ASSESSMENT METHODOLOGY**

This section shall include the study strategy, methodology and boundaries, within which the Environmental Assessment Report will be prepared. For the purpose of the Environmental Impact Statement, Valued Environmental Components (VECs) are interpreted as environmental; socio-economic; human health; reasonable enjoyment of life and property; and cultural, historical, archaeological, paleontological and architectural features that may be impacted, whether positive or negative, by the proposed project.

The following must be clearly defined:

- The VECs within the study boundaries and the methodology used to identify the VECs. The methodology shall include input from members of the public, government department and agencies and other interested parties;
- The temporal boundaries (i.e. duration of specific project activities and potential effects) for construction and operation;
- The study boundaries or project area and all space that will be potentially impacted by the project as proposed or subject to subsequent modifications and the methodology used to identify the study boundaries;
- Strategy for investigating the interactions between the project and each VEC and how that strategy will be used to coordinate the individual studies undertaken; and

- Strategy for predicting and evaluating project effects upon the environment, determining necessary mitigation, remediation and/or compensation; and evaluating residual effects.

8. **EXISTING ENVIRONMENT**

This section of the EIS shall provide baseline descriptions of the physical, biological and human (socio-economic) environments. A baseline environment is the condition that exists prior to Project development.

The Proponent shall clearly indicate baseline data/information that is not available or existing data that cannot accurately represent environmental conditions in the project area year round.

If the background data have been extrapolated or otherwise manipulated to depict environmental conditions in the project area, modeling methods and equations shall be described and shall include calculations of margins of error. The components of the environment to be discussed shall include identified VECs and the following:

8.1 Area Geography

Describe the study area geography and topography.

8.2 Existing and Planned Land Uses

Describe the patterns of current and planned land use in the Project area including, but not limited to, planning strategies, proposed development, and development boundaries. This section should include map(s) to illustrate land uses and provide distances to significant settlements.

8.3 Socio – economic Conditions

Describe the current socio-economic conditions of the area. Include population demographics, economic conditions of the area.

Provide details of employment rates and trends at the local and regional level. Identify key industries in the region and describe their contribution to the local and regional economies. Provide details of residential and commercial property values.

Describe any local and regional economic development goals and objectives identified through community consultation, or existing economic development plans and strategies.

8.4 Human Health

Assess health of residents of the areas affected by the Project. Employ appropriate qualitative and quantitative indicators regarding elements of health (such as respiratory health) that may be affected by the Project to create baseline data.

8.5 Terrain, Geology, and Soils

In relation to terrain, geology, and soils, the Proponent shall describe the regional/area setting with reference to the topography, geomorphology, bedrock geology, and surficial geology.

8.6 Atmospheric Conditions

The Proponent shall describe the existing or baseline climate conditions and climatic variability and trends, including, but not necessarily limited to:

- Prevailing climatic conditions, seasonal variations, predominant winds including direction and velocity, temperature and precipitation (snowfall snow depth, rain, fog)
- Occurrence and frequency of storm and extreme weather events
- Any current or historical climate-related extreme events that may affect the Project

8.7 Air Quality

The Proponent shall:

- Describe ambient air quality in the area affected by the Project and define the spatial boundaries of the study area and monitoring, including a rationale for its delineation; and
- In the study area, identify current sources of emissions, seasonal variations climatic conditions affecting air quality (e.g., wind direction and velocity) and, if known, assimilative capacity. Characterize the existing air quality and precipitation chemistry, including PM10, PM 2.5, PAHs, VOCs, and any other contaminant of potential concern (COPCs). The characterization of air quality should be based on (but not limited to) parameters identified in national, provincial, or other relevant air quality standards and objectives. Describe any potentially sensitive receptors or locations
- Provide detailed methodology for ambient and emission air quality monitoring, including location, methods, instrumentation, calibrations, protocols, procedures, and rationale.

8.8 Noise

The Proponent shall:

- Describe the existing ambient acoustical environment at the Project site, and in any other areas where Project activities could be expected to have an environmental effect;
- Consider the effects of different meteorological conditions on noise propagation; and
- Provide information on any existing relevant standards, guidelines or objectives with respect to noise levels.

8.9 Terrestrial Water Quality and Quantity

In relation to terrestrial water quality and quantity, the Proponent shall describe terrestrial water quality and quantity in surface water, groundwater, and wetlands, and pay particular attention to the interactions of the hydrologic components.

8.9.1 Surface Water

The Proponent shall:

- Provide a map delineating the watershed(s) and sub-watersheds within the Project area;
- Identify and delineate within the watershed(s) all recharge and discharge areas, ponds and lakes;
- Identify the location, size and class (based on the Canadian Wetland Classification System) of any wetland within the predicted zone of influence and conduct a wetland evaluation.
- Describe and quantify the hydrological conditions and water quantity and quality for all surface waters by:
    - Describing flow regimes;
    - Seasonal flow patterns;
    - Channel / bed / drainage basin morphology and stability;
    - Sediment load – suspended and bedload
    - Providing estimates of normal (base and mean) flows and extreme (high and low) flows and water levels; and
    - Characterizing baseline water quality, including physical, chemical, and bacteriological parameters where relevant to identified water use, and related to relevant guidelines or standards. (eg Canadian Water Quality Guidelines).
- Describing sampling protocols and analytical methods used.
- Describe any surface water use in the area, including both current and potential future uses.

8.9.2 Ground Water

In relation to ground water, the Proponent shall:

- Provide a description of the regional and local hydrogeology of the Project Area. This shall include a discussion of both groundwater quality and quantity;
- Describe the characteristics of surface water and groundwater interactions under different climatic and seasonal conditions;
- Synthesize the groundwater and surface water data to produce a conceptual/analytical model of the ground water conditions under and around the Project site.
- Describe any groundwater use in the area, including both current and potential future uses.

8.10 Marine Environment

In relation to the marine environment, the Proponent shall describe the existing conditions, including bathymetry and tidal activity. Describe marine sediments including the physical and biological processes related to sediment deposition, movement and quality. Include sediment types and physical properties, thicknesses, chemistry, quality and mechanisms and rates of sediment transport.

8.11 Flora, Fauna and Habitat

Identify typical species of flora, flora species-at-risk and potential habitat for flora species-at-risk in the Project area. Identify typical species of fauna, fauna species-at-risk and potential habitat for fauna species-at-risk in the Project area. Identify fish habitat that includes (but not limited to) fish spawning, rearing nursery, food supply and migration areas. Field surveys should be described by results, methodology, and temporal framework.

8.12 Heritage Resources

Identify any areas containing features of historical, cultural or archaeological importance. Describe the nature of the features located in those areas.

9. **ADVERSE EFFECTS AND ENVIRONMENTAL EFFECTS ASSESSMENT**

The Report shall identify and predict the magnitude and importance of project effects, both positive and negative, on the environment. This section shall address effects on identified VECs, as well as, but not limited to, the following socio-economic, community and biophysical environmental effects. This section shall specifically address the environmental effects of malfunctions or accidents.

This section shall also address effects of the environment on the project including a discussion of how potential climate change will impact the project.

9.1 Effects from Existing and Planned Land Uses

The Proponent shall:

- Describe the effect of the proposed project on present and future commercial/residential/institutional/recreational and resource land uses within the Project area;
- Describe the potential effects from existing or planned land uses in the project area; and
- Describe effects from existing and planning undertakings in the project area.

9.2 Effects on Socio-economic Conditions

The Proponent shall:

- Describe the potential effects of the proposed project on residential property values;
- Describe the anticipated changes in traffic density associated with the construction and operation of the Project;
- Describe the potential effect on recreational opportunities, including the effects on aesthetics (view planes etc);
- Describe the potential socio-economic benefits of the proposed project.

9.3 Effects on Human Health

Describe and evaluate the potential effects of the Project on human health. Describe and evaluate potential effects on measures of health (such as respiratory health) that may be affected by the Project.

9.4 Effects on Air Quality

In relation to the effects on air quality, the Proponent shall:

- Describe and quantify the effects on air quality during construction including transportation related activities with particular attention to particulate matter (PM) including PM2.5, PM10 and total suspended particulate (TSP), nitrogen oxides (Nox), sulphur dioxide (SO2), volatile organic compounds (VOC) and polycyclic aromatic hydrocarbons (PAH) levels anticipated;
- Describe the sources, types and estimated quantities of air emissions (including fugitive emissions) under routine conditions and in the case of malfunctions and accidental events;
- Describe the effect of stack emissions and quantify where possible;
- Describe the potential for micro-climate modifications in the vicinity of the project;

- Describe the predicted greenhouse gas emissions providing an inventory of greenhouse gas emissions from the facility; and
- Describe the use of best available technology that is economically affordable for reducing air emissions and if they will or will not be incorporated into the project, including the rationale for the decisions
- Describe plans for ongoing air quality and emissions monitoring during the life of the project.

9.5 Noise Effects

The Proponent shall describe the potential effects of any predicted increase in noise levels from construction and operation activity on residential, commercial, recreational and institutional areas and sensitive wildlife habitats.

9.6 Effects on Surface Water

The Proponent shall describe any receiving waters which may be effected from project related activities during all construction and operational phases and discuss all associated effects to surface water and wetlands, including effects on surface water uses.

9.7 Effects on Ground Water

The Proponent shall describe any anticipated changes to groundwater quality and quantity and the significance of the anticipated changes. Discuss potential changes in groundwater quality or quantity on users of groundwater, fish, fish habitat, surface water quality and quantity, and wetlands. Discuss any potential effect to groundwater from the accidental release of a hazardous substance.

9.8 Effects on Marine Environment

The proponent shall describe the effects of construction and operation of the project on the marine environment.

9.9 Effects on Flora, Fauna, and Habitat

The Proponent shall describe the effects of construction and operation of the project on terrestrial and aquatic fauna, and include a full accounting of effects on species of concern and significant habitats.

9.10 Effects on Heritage Resources

The Proponent shall describe the effects of construction and operation of the Project on heritage resources.

10. **PROPOSED MITIGATION**

The Proponent shall describe all measures that have or will be taken to avoid or mitigate negative effects and maximize the positive environmental effects of the project.
Mitigation includes the elimination, reduction or control of the adverse effects or the significant environmental effects of the project and may include restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means.

Describe compensation that will be provided when environmental damage is unavoidable or cannot be adequately mitigated by any other means. This section shall address, but not necessarily be limited to, the following:

10.1 Regulatory Compliance

Describe any legislation, regulations, guidelines, policies and specifications that will be adhered to during construction and operation of the facility that will lead to avoidance or mitigation of adverse environmental effects.

10.2 Existing and Planned Land Uses

Describe the measures planned to minimize the potential effects on existing and planned land uses.

10.3 Socio-Economic Effects

Describe actions that will be taken to mitigate adverse effects on private and commercial property and on human activities. Describe the mitigation measures planned to address anticipated effects from any predicted changes in traffic. Provide a dispute resolution policy for addressing project related complaints and concerns that may be received from nearby land owners or residents.

10.4 Human Health Effects

Describe actions that will be taken to mitigate adverse effects on human health.

10.5 Air Quality Effects

Describe measures that will be taken to control emissions from all sources – stationary and mobile. Identify standards and targets for air quality both on site and region wide. Describe any greenhouse gas mitigation plans.

10.6 Noise Effects

Describe measures that will be taken to mitigate any potential increase in noise levels during construction and operation.

10.7 Surface Water Quality and Quantity

Describe all mitigation measures that will be used in construction, operation and decommissioning phases of the project to reduce effects to surface water resources. Discuss all mitigation measures planned to prevent the release of hazardous substances, including fuel oil, into local surface waters. Discuss commitments to provide contingency and remediation plans for any effect to surface water resources, including decrease of water quality or quantity.

10.8 Groundwater Quality and Quantity

Describe all mitigation measures that will be used in construction, operation and decommissioning phases of the project to reduce effects to groundwater resources. Describe mitigation measures planned to prevent contamination of groundwater from the accidental release of a hazardous substance (including fuel oil). Discuss commitments to provide contingency and remediation plans for any effect to groundwater resources, including decrease of groundwater quality or quantity.

10.9 Marine Environment

Discuss measures that will be taken to minimize the effects of the construction and operation of the project on the marine environment.

10.10 Flora, Fauna and Habitat

Discuss measures that will be taken to minimize the effects of the project construction and operation on flora species. Describe the measures that will be taken to minimize the effects of the project construction and operation on terrestrial and aquatic fauna.

10.11 Heritage Resources

Describe the measures that will be taken to minimize the effects of construction and operation of the project on heritage resources.

11. **CUMMULATIVE EFFECTS**

Cumulative effects may occur when the impacts of one project or activity combine with the impacts of other past, present and future projects and activities. The cumulative impacts assessment must include the following five components:

1) Scoping
2) Analysis
3) Mitigation
4) Significance
5) Follow-up

Scoping: Identify the VECs, or their indicators, on which the cumulative effects assessment is focused, including the rationale for their selection. The spatial and temporal boundaries for the cumulative impact assessment must be presented for each VEC selected. The sources of potential cumulative effects must be identified. Accordingly, identify other projects or activities that have been or will be carried out that could produce impacts a) on the selected VEC; and b) within the boundaries defined; and c) whose impacts would act in combination with the residual impacts of the Project.

Analysis: The analysis of the cumulative effect must enable an understanding of the incremental contribution of all projects or activities, and of the Project alone, to the total cumulative effect on the VEC over the life of the Project. Different types of potential impacts should be discussed, such as synergistic, additive, induced and spatial or temporal overlap. Impact pathways and trends should be included.

Mitigation: Identify tools and approaches to mitigating cumulative impacts, including economic and technical considerations, as well as community involvement. Identify proposed mitigation, including a discussion on goals and effectiveness. Discuss any proposed application of adaptive management. If Project-related cumulative impacts remain following mitigation, discuss the need to pursue regional and/or non-Project specific mitigative measures. In this case, discuss how the Proponent would contribute to, influence or control the implementation of mitigation that extends beyond its Project (e.g., possible approaches, policies, coordination, partnerships). Discuss any other proposed actions or initiatives that the Proponents would carry out to strengthen or improve aspects of the physical, biological or human environments vulnerable to cumulative impacts.

Significance: For each VEC or indicator assessed, evaluate the significance of residual cumulative impacts and discuss the relative contribution of the Project to those impacts. Identify how significance was determined. The analysis must indicate the Proponents' view as to whether the Project would be responsible for adversely affecting a VEC or indicator beyond an acceptable point and how that VEC relates to the state and trends in the broader physical, biological or human environments.

Follow-up: Follow-up refers to proposed monitoring that would be undertaken following Project approval, specifically to verify the accuracy of cumulative impacts predictions and the effectiveness of mitigation.

12. CAPACITY OF RENEWABLE RESOURCES

Consider the capacity of renewable resources that are likely to be significantly affected by the Project to meet the needs of the present and those of the future would be affected.

Identify those resources likely to be significantly impacted by the Project, and describe how the Project could affect their sustainable use. Identify and describe any criteria used in considering sustainable use.

13. RESIDUAL ADVERSE EFFECTS AND ENVIRONMENTAL EFFECTS

This section of the Report shall list and contain a detailed discussion and evaluation of the residual effects for each VEC, including the criteria for determining significance (under the Environmental Assessment Regulations "significant" means, with respect to an environmental effect, an adverse effect in the context of its magnitude, geographic extent, duration, frequency, degree of reversibility, possibility of occurrence or any combination of the foregoing). Residual effects are those adverse effects or significant environmental effects, which cannot or will not be avoided or mitigated through the application of environmental control technologies or other acceptable means. Those effects that cannot be mitigated or avoided shall be clearly distinguished from those effects that will not be mitigated or avoided.

These effects become important in the evaluation of a proposed project as they represent the environmental cost of the project.

14. EVALUATION OF THE ADVANTAGES AND DISADVANTAGES

This section shall present an overall evaluation of the advantages and disadvantages to the environment, including the VECs, during the construction, operation and decommissioning phases of the project. The evaluation of the disadvantages shall include an examination of the significance of each disadvantage and a discussion of its justification.

15. PROPOSED COMPLIANCE AND EFFECTS MONITORING AND FOLLOW UP PROGRAMS

The Proponent shall include a framework upon which compliance and effects monitoring will be based throughout the life of the proposed project, including abandonment. Monitoring programs must be designed to determine the effectiveness of the implemented mitigation measures. As part of the monitoring program, the Proponent shall describe the compliance reporting methods to be used, including reporting frequency, methods and format.

The Proponent shall include a proposed monitoring schedule which indicates the duration of effects monitoring following project completion.
The description of the compliance and effects monitoring program shall include any contingency procedures/plans for addressing potential exceedances of environmental protection standards, guidelines or approvals.

The compliance and effects monitoring program shall also indicate who will be responsible for ongoing monitoring as well as any plans to make monitoring results available for peer review or public review.

Discuss the need for, and requirements of, a follow-up program, including consideration of:

- the need for such a program and its objectives
- the main components of the program
- how it would be structured
- the roles to be played by the Proponent, regulatory agencies, Aboriginal people and others in such a program
- possible involvement of independent researchers
- the sources of funding for the program
- information management and reporting

16. PUBLIC INFORMATION PROGRAM

This section of the Report shall detail the public information program initiated by the Proponent. The Proponent shall describe in detail the opportunities that have been or will be provided to allow the public to express their concerns and receive information on the various phases of project development including planning design, environmental assessment review, operation, abandonment, site rehabilitation, post abandonment and monitoring. This section shall include a description of the various stakeholders for this project and how they were identified and informed of the project.

The results of public consultation and information sessions shall detail what comments were raised, how they were addressed, including any commitments made by the Proponent.

17. ASSESSMENT SUMMARY AND CONCLUSION

This section of the report shall summarize the overall findings with emphasis on the main environmental issues identified.